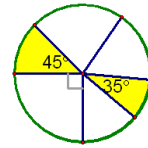


11-7 Use Geometric Probability

$$\text{Probability} = \frac{\# \text{ of successes}}{\# \text{ of outcomes}}$$

ex 1

What is the probability that a point (in the circle) chosen at random lies in the shaded region?



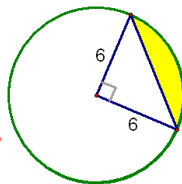
d = 18 in

$$P = \frac{80}{360} = .22$$

$$\text{Probability} = \frac{\# \text{ of successes}}{\# \text{ of outcomes}}$$

What is the probability that a point (in the circle) chosen at random lies in the shaded region?

ex 2

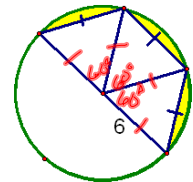


$$P = \frac{\frac{A_{\text{shaded}}}{A_{\text{circle}}} = \frac{A_{\text{sector}} - A_{\Delta}}{A_{\text{circle}}}}{(36\pi)} = .09$$

$$P = \frac{\frac{90}{360} \cdot 36\pi - \frac{1}{2} \cdot 6 \cdot 6}{(36\pi)} = .09$$

Find the area of the shaded region.

$$\text{Probability} = \frac{\# \text{ of successes}}{\# \text{ of outcomes}}$$



What is the probability that a point (in the circle) chosen at random lies in the shaded region?

$$3 \left(\frac{A_{\text{sect}} - A_{\Delta}}{A_{\text{circle}}} \right)$$

$$= 3 \left(\frac{\frac{60}{360} \cdot 36\pi - \frac{6^2 \sqrt{3}}{4}}{36\pi} \right)$$

$$= 3 \left(\frac{6\pi - 9\sqrt{3}}{36\pi} \right)$$

$$= \frac{9.78}{(36\pi)} = 9.78$$

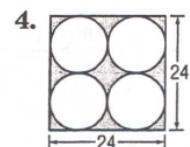
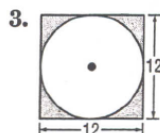
$$P = .09$$

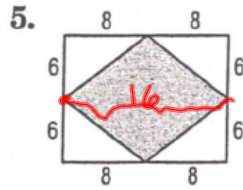
$$\frac{A_{\text{shaded}}}{A_{\text{sq}}}$$

$$\frac{A_{\text{sq}} - A_{\text{circle}}}{A_{\text{sq}}}$$

$$\frac{144 - 36\pi}{144}$$

$$P = .21$$

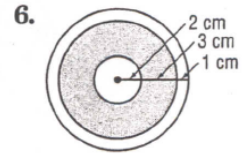




$$\frac{A_{\text{Rh}}}{A_{\text{rect}}}$$

$$\frac{\frac{1}{2} 16 \cdot 12}{16 \cdot 12}$$

$$P = \frac{1}{2}$$



$$r_1 = 2$$

$$r_2 = 3$$

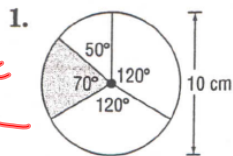
$$r_3 = 6$$

$$A_{\text{shaded}} = A_2 - A_1$$

$$25\pi - 4\pi$$

$$A_{\text{shaded}} = 21\pi$$

$$P = \frac{21\pi}{36\pi} = .58$$

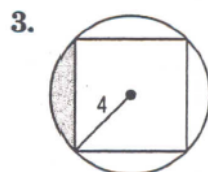
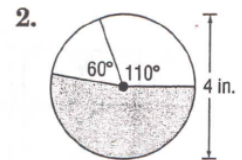


$$\frac{70}{360}$$

$$P = .19$$

$$\frac{70}{360} \cdot 25\pi$$

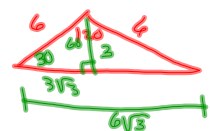
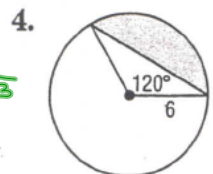
$$25\pi$$




$$\frac{120}{360} 36\pi - \frac{1}{2} 3 \cdot 6\sqrt{3}$$

$$36\pi$$

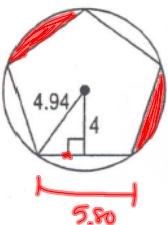
$$P = .20$$



360 \div 5



6.



$$2 \left(\frac{72}{360} 4.94^2 \pi - \frac{1}{2} 4 \cdot 5.80 \right)$$

$$(4.94^2 \pi)$$

P = .10

$4.94^2 = 4^2 + x^2$
 $2.9 = x$

HW

p774-775

#s 3, 4, 8-11, 20, 21